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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,991	03/30/2004	Yasuji Suzuki	713-584A	2655

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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/811,991	Applicant(s) SUZUKI, YASUJI	
	Examiner George R. Koch III	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasui (JP-04363163 A).

Yasui discloses a method for forming a coated film of a thermoplastic material (see abstract - which recites thermoplastic resin) on a region of at least a part of an inner cylinder so as to extend in a whole circumferential direction thereof (as shown in Figure 2), comprising the steps of providing a paste applying machine (see Figure 1, items 7-13 or Figure 3, items 7, 10, 12, 13, 14, 15 and 15a) for discharging a molten paste (i.e., the resin primer) of the thermoplastic material kept molten by heating from a distal end of a nozzle (see abstract, which recites "thermally sprayed". Thermally sprayed defines that the material will be heated and melted, which indicates that the material will achieve

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molten paste form), arranging said nozzle in space in the cylinder so that the molten paste is discharged toward the inner peripheral surface of the cylinder (see either Figure 1 or 3), moving the nozzle along a rotational center of the cylinder (via structure 9 of Figure 1, or structures 15 and 15a of Figure 3, which are described in the specification as rotary elements) within a range opposite to the region while rotating the cylinder (via structures 4, 4a and 5 of Figure 1) in said circumferential direction and discharging the molten pass from the nozzle (shown in Figures 1 and 3), and spreading the molten paste applied to the inner peripheral surface (as shown in Figures 1, 2, and 3). The reference does not specifically recite that the spreading occurs by means of centrifugal force acting on the cylinder being rotated, to thereby wholly cover the region with molten paste. However, the reference shows that the cylinder is rotated during the coating operation (Figures 1, 2 and 3). The rotation of the cylinder inherently creates a rotational force, which creates spreading and thereby wholly covers the region with molten paste.

As to claim 2, Yasui shows that the molten paste discharged onto the inner peripheral surface is not scattered to a region other than the inner peripheral surface. Therefore, Yasui inherently discloses that the viscosity of the thermally treated molten paste, the speed of the cylinder, and speed of movement of the nozzle have been determined so as to prevent the molten paste discharged onto the inner peripheral surface from the nozzle from being scattered to a region other than said region (i.e., other than the inner peripheral surface).

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As to claim 12, Yasui discloses that the spreading step overlaps the moving step (as shown in Figure 1).

As to claim 13, this movement results in a spiral pattern.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 2, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasui in view of either of Feder (US Patent 4,687,531) or Potoczky (US Patent 4,687,531).

Yasui discloses a method for forming a coated film of a thermoplastic material (see abstract - which recites thermoplastic resin) on a region of at least a part of an inner cylinder so as to extend in a whole circumferential direction

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thereof (as shown in Figure 2), comprising the steps of providing a paste applying machine (see Figure 1, items 7-13 or Figure 3, items 7, 10, 12, 13, 14, 15 and 15a) for discharging a molten paste (i.e., the resin primer) of the thermoplastic material kept molten by heating from a distal end of a nozzle (see abstract, which recites "thermally sprayed". Thermally sprayed defines that the material will be heated and melted, which indicates that the material will achieve molten paste form), arranging said nozzle in space in the cylinder so that the molten paste is discharged toward the inner peripheral surface of the cylinder (see either Figure 1 or 3), moving the nozzle along a rotational center of the cylinder (via structure 9 of Figure 1, or structures 15 and 15a of Figure 3, which are described in the specification as rotary elements) within a range opposite to the region while rotating the cylinder (via structures 4, 4a and 5 of Figure 1) in said circumferential direction and discharging the molten pass from the nozzle (shown in Figures 1 and 3), and spreading the molten paste applied to the inner peripheral surface (as shown in Figures 1, 2, and 3).

However, the reference does not specifically recite that the spreading occurs by means of centrifugal force acting on the cylinder being rotated, to thereby wholly cover the region with molten paste. One can interpret this as not disclosing a rotational force which creates spreading and thereby wholly covers the region with molten paste.

In any event, both Feder and Potokczy disclose thermal spraying of a molten material onto the interior substrate. Furthermore, Feder discloses that the rotation of the substrate distributes the fluidized particles into lamina, and that

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further centrifugal forces automatically distribute the particles effectively (see abstract). Additionally, Potoczky discloses that centrifugal forces evenly distribute molten material (column 2, lines 40-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized rotation and centrifugal forces to spread the material effectively and uniformly.

As to claim 2, Yasui as modified by Feder and Potoczky shows that the molten paste discharged onto the inner peripheral surface is not scattered to a region other than the inner peripheral surface. Therefore, Yasui as modified by Feder and Potoczky inherently discloses that the viscosity of the thermally treated molten paste, the speed of the cylinder, and speed of movement of the nozzle have been determined so as to prevent the molten paste discharged onto the inner peripheral surface from the nozzle from being scattered to a region other than said region (i.e., other than the inner peripheral surface).

As to claim 12, Yasui and Feder disclose that the spreading step overlaps the moving step (as shown in Figure 1 of Yasui and in columns 6-7 of Feder).

As to claim 13, this movement disclosed in both Yasui and Feder results in a spiral pattern.

6. Claim 3, 8-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasui or Yasui in view of either of Feder and Potoczky.

Yasui discloses the method of claim 1, including the steps of providing a paste applying machine as claimed, arranging the nozzle in space as claimed,

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moving the nozzle as claimed and spreading the molten paste as claimed (see rejection of claim 1 above for citation and details). Furthermore as to claim 2, Yasui also inherently discloses these additional limitations of since the Yasui inherently has a rotation speed of the cylinder (since the cylinder is rotated), a speed of movement of the nozzle (since the nozzle is disclosed as moving), and a viscosity is present (since the resin is thermally sprayed as a resin, i.e., viscous material) and since the molten paste is discharged onto the inner peripheral surface from the nozzle and not scattered onto a region other than the inner peripheral surface.

Yasui does not disclose said molten paste is discharged from said nozzle under a pressure of 1 kg/cm^2 or less under the conditions that said viscosity of said molten paste is set to be within a range of between 50cp and 100 cp, said rotational speed of said cylinder is set to be within a range of between 2700 rpm and 3300 rpm, said speed of movement of said nozzle is set to be within a range of between 0.055 m/s and 0.08 m/s and a distance between said distal end of said nozzle and said inner peripheral surface of said cylinder is set to be within a range of between 3mm and 7mm.

However, the apparatus of Yasui discloses the general conditions of the claim, i.e., that the resin is sprayed in a heated state (and thus has a viscosity and a spray pressure), that the cylinder rotates (and thus has a rpm setting), that the nozzle moves (and thus has a nozzle speed), that the nozzle is spaced from the cylinder (and thus has a distance from the distal end). Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover

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the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2nd 454, 456, 105 USPQ 233, 235 (CCPA 1955) (and see MPEP 2144.05). Thus, it would have been well within the skill of one of ordinary skill in the art to have selected the claimed ranges and settings as part of routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected, in the process of routine experimentation to optimize the process of Yasui, the particular ranges and setting claimed.

Response to Arguments

7. Applicant's arguments filed 11/09/2004 have been fully considered but they are not persuasive.
8. Applicant argues 1) that Yasui does not disclose molten thermoplastic paste. This is not persuasive. Yasui discloses *thermally spraying* a thermoplastic material. The thermal action melts the thermoplastic material into a molten paste. Applicant argues 2) that Yasui does not disclose rotational or centrifugal operation, and that the Japanese text or translation does not disclose this movement. However, Yasui's figures show 1) rollers (items 4 and 4a), a stationary nozzle (item 7) and 3) molten thermoplastic on the upper end of the pipe. Therefore, Yasui's figures disclose the rotational/spiral/centrifugal motion.
9. In any event, both Feder and Potoczky disclose that rotational, spiral, or centrifugal motion is used to distribute materials effectively.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-800-877-8339 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Patent Examiner
Art Unit 1734

GRK
1/02/2004